

---

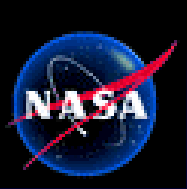
# NASA's Education Mission

---

## *Earth System Science and Applications Advisory Committee*

Dr. Adena Williams Loston  
*Associate Administrator for Education*

November 14, 2002



# Mission

---

*To inspire the next generation of explorers  
... as only NASA can*

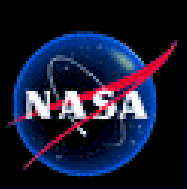
NASA Mission Statement April 2002



# Education as a Core Mission

---

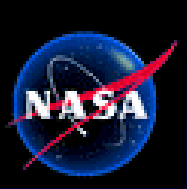
- *Our Nation is failing to produce the number of Scientists, Mathematicians, Engineers and Technologists needed to support our Nation's Economic Needs and National Security Needs*
- **Consequently, hundreds of thousands of foreign nationals are being imported into the United States to fill our Nation's needs**
- **The trend for the future suggests that this problem will worsen, as our public and private education systems will not satisfy the increasing need for a more sophisticated work force.**



# Education as a Core Mission

---

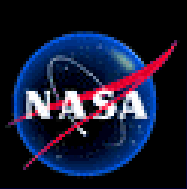
- *Our Nation's education system is failing to equip our children with essential mathematics and science skills*
  - Despite national needs for greater economic security and technology, nearly 75% of our nation's 4<sup>th</sup> and 8<sup>th</sup> graders and nearly 80% of our 12<sup>th</sup> graders are scoring at levels below proficient in mathematics and science for their grades
  - International mathematics and science assessments show that as U.S. students progress through their education they do progressively worse than the rest of the world.
  - National and international benchmarks confirm that minority students and students from low-income families perform particularly poorly in relation to other U.S. and international students.



# Education as a Core Mission

---

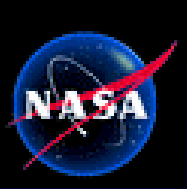
- *Mathematics and Science Spur Economic Growth and Competitiveness*
  - Science and mathematics are key drivers in an economy that relies heavily on emerging technologies.
  - Other nations have stepped up their efforts in creating a well-trained workforce in science and technology, often competing with U.S. workers.
  - Many of today's fastest growing jobs require a solid mathematics or science background.
  - Of the 20 fastest growing occupations projected by the Bureau of Labor Statistics (BLS) through 2010, 15 of them require substantial mathematics or science preparation.



# Education as a Core Mission

---

- *NASA is uniquely positioned to be able to positively effect an increase in the numbers of scientists, mathematicians, engineers and technologists*
- *NASA's Enterprise activities produce:*
  - **Amazing Scientific Discoveries;**
  - **Cutting Edge Technologies which depict Extraordinary Visualizations;**
  - **Marvelous Feats of Engineering;and**
  - **Embedded in all of the Enterprise activities is a fundamental knowledge of Mathematics.**
- *NASA can and must leverage its unique Enterprise activities to Inspire the Next Generation of Explorers like it has not done before.*

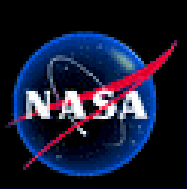


# Priorities

---

*If we are to Inspire the Next Generation of Explorers ... as only NASA can, we must:*

- Motivate students to pursue careers in science, mathematics, engineering, and technology
- Provide educators with unique teaching tools and compelling teaching experiences
- Seek to ensure that we are investing the taxpayer's resources wisely
- Engage minority and underrepresented students, educators, and researchers in NASA's education program

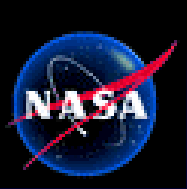


# NEO Initiative - 2 Strategies

---

- *The NEO Initiative will incorporate two major strategies to ensure the Agency's success in inspiring the next generation of explorers:*
  - **Expand the pool of students entering the STEM pipeline (Pre-college)**
    - **NASA Explorer Schools/Academies**
    - **Educator Mission Specialist**
    - **NASA Explorer Institutes (Informal Education)**
  - **Increase the number of individuals entering the STEM workforce (Post-secondary)**
    - **Scholarship for Service**





# Education Priorities

---

- **Goal #1** Motivate students to pursue careers in science, mathematics, engineering, & technology ... as only NASA can
  - *We will reach out to all students in this country--not just those near a NASA Center*
  - *We will reach students at an earlier age to help them make a connection to higher education*
  - *We will partner with others and use their infrastructure--we will avoid recreating what others have already built*
  - *Centers and Enterprises will work together within an overarching education program*



# Education Priorities, cont'd

*sub-bullets are indications or behaviors that will be emphasized*

---

- **Goal #2** Provide educators with unique teaching tools and compelling teaching experiences ... as only NASA can
  - *We will not implement programs that are being provided by others*
  - *We will emphasize contributions to education that are unique to NASA -- namely, the "raw material" of inspiration that comes from scientific discoveries and the excitement of human spaceflight*
  - *We will extend the reach of education collaborations between NASA and the academic community that contribute to NASA's research objectives*



# Education Priorities, cont'd

*sub-bullets are indications or behaviors that will be emphasized*

---

- **Goal #3** Seek to ensure that we are investing the taxpayer's resources wisely
  - *We will reap the full benefit of our educational investments by replenishing our workforce with students coming out of NASA's educational programs*
  - *We will align education projects to an overarching education strategy*
  - *We will provide for external evaluation to ensure that NASA's programs are meeting their expected outcomes*
  - *We will compare similar programs against one another to ensure that program outcomes are commensurate with program costs*
  - *We will work with NASA contractors and other agencies to coordinate our education program with theirs*

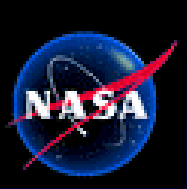


# Education Priorities, cont'd

*sub-bullets are indications or behaviors that will be emphasized*

---

- **Goal #4** Engage minority and underrepresented students, educators, and researchers in NASA's education program
  - *We will continue to strengthen the capacity for promising minority institutions to conduct leading-edge research*
  - *We will seek to strengthen the capability for minority educational institutions to fully compete for all NASA grants and contracts*
  - *We will work with others to increase the number of minority students pursuing STEM careers to meet the Nation's and NASA's needs*



# Mission

---

*To inspire the next generation of explorers  
... as only NASA can*

NASA Mission Statement April 2002